

Energy News Overview

The United Nations climate conference produced no more than a modest set of measures toward a new international agreement two years from now. As usual, the biggest dispute was over money. The 19th annual meeting opened two weeks ago in the shadow of a devastating typhoon in the Philippines, which added momentum to a proposal by poorer nations for a new mechanism to compensate developing countries for damage from climate-related disasters. Despite the polarization between developed and developing nations, delegates agreed to a broad outline for pledging emissions cuts and gave their support for a new treaty mechanism to tackle the human cost of rising seas, floods, stronger storms.

Nationally, the EPA has proposed reducing the amount of ethanol required by the 2007 Renewable Fuel Standard legislation for calendar 2014, and probably 2015. The primary reasons cited by the EPA were improving fuel economy of new vehicles which reduced the volume of the gasoline in which ethanol could be blended (manufacturers warranty most cars for an ethanol blend limit of 10 percent) and the failure of the biofuels industry to bring meaningful volumes of cellulosic ethanol to market. See article on page 5.

In Canada, with the several pipeline options to move oil sands crude in political limbo, rail transport of oil has emerged as the Plan B. Significant amounts of Canadian and tight oil from North Dakota are already being delivered to US refineries by rail. Rail transport of oil is not without controversy and the Vancouver Sun published a review of the topic in early November: see article page 6.

The Energy Information Administration reported that the nation produced more crude oil and natural gas liquids than it imported in September. Domestic production is at a 24 year high and imports are at a 17 year low. Some energy experts noted this as an important milestone for the nation as it moves towards its goal of energy independence. At the same time the International Energy Administration observed that U.S. tight oil production, where most growth in U.S. production is occurring, would peak at the end of this decade and that total liquid fuel production would then begin to decline in the early part of the next decade.

In Washington State, the SGL Automotive Carbon Fibers, a joint venture with German luxury automaker BMW, announced that it will invest \$100 million to add two new production lines at their Moses Lake plant.

State and Federal regulators completed the public comment period for the proposed coal export terminal in Longview Washington. The Army Corps of Engineers, Washington's Ecology Department and Cowlitz County are preparing to sift through more than 163,000 comments to decide what environmental impacts should be reviewed. There is another coal and export terminal proposal for Whatcom county, that is also in the review process.

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What's Happening in the Energy Office

Climate Legislative and Executive Workgroup (CLEW) Meetings

The Climate Legislative and Executive Workgroup is charged with recommending a state program of actions and policies to reduce greenhouse gas (GHG) emissions, that if implemented would ensure achievement of the state's 2020 and 2035 emissions limits (RCW 70.235). The next two scheduled CLEW meetings are Dec. 3, 9-11 AM, and Dec. 13, 2-4PM, Senate Hearing Room 4.

Dept. of Commerce awarded \$2 million for Pacific Northwest Solar Partnership

The Washington State Department of Commerce received a \$2 million award from the U.S. Department of Energy (DOE) SunShot Initiative to make rooftop solar installations easier, faster and less expensive for residents of Washington and Oregon. The funding will remove hurdles for solar photovoltaic installers across the two states, and increase financing options to make solar energy affordable for all residents.

SGL Automotive Carbon Fibers to double production in Moses Lake

SGL Automotive Carbon Fibers, a joint venture with German luxury automaker BMW, will invest \$100 million to add two new production lines at their Moses Lake plant in a project of statewide significance, Commerce Director Brian Bonlender announced today. Washington State's reputation as one of the world's premier locations for carbon fiber production and other advanced manufacturing activities is becoming more powerful every day, added Bonlender. The company will double production capacity of their current operation, opened in 2012, in order to supply all of the raw carbon fiber used in BMW's new electric vehicles.

Clean Energy Fund Updates

The Energy Office has posted the **Federal Grant Matching** component

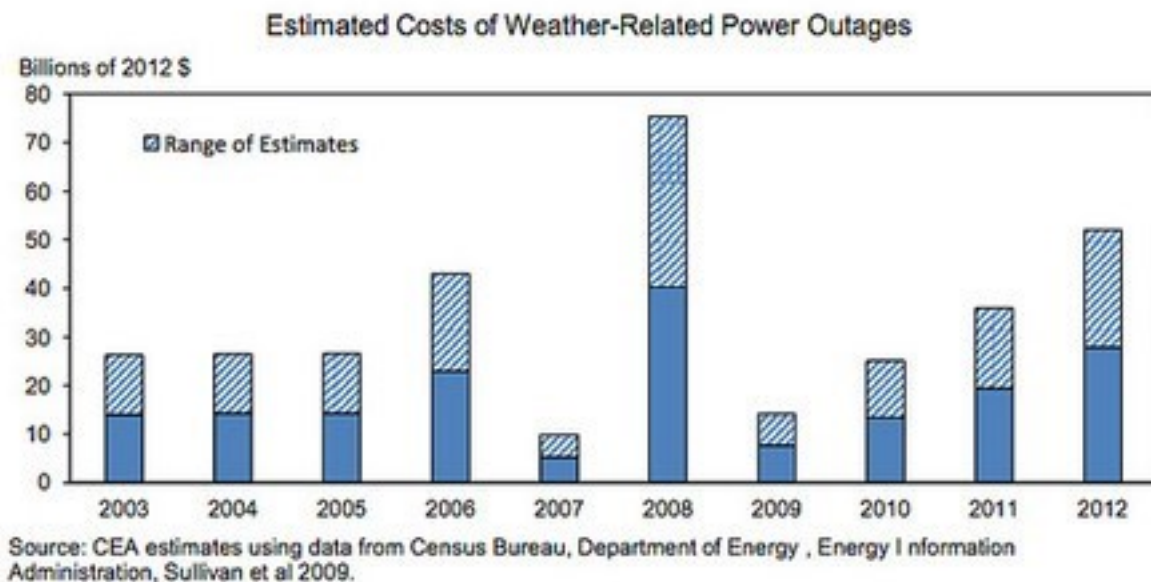
<http://www.commerce.wa.gov/Programs/Energy/Office/Pages/CEF-federal-match.aspx>

Smart Grid Grants to utilities application guidelines

<http://www.commerce.wa.gov/Programs/Energy/Office/Pages/Smart-Grid-Grants.aspx>

Severe Weather and Power Outages

Severe weather is the number one cause of power outages in the United States, costing the economy between [\\$18 and \\$33 billion every year](#) in lost output and wages, spoiled inventory, delayed production and damage to grid infrastructure. The number of outages is expected to rise as climate change increases extreme weather events.



Electricity, Petroleum & Natural Gas Prices

Energy Price Overview

The price for West Texas Intermediate crude oil continued the decline that began in September, ending the month of November in the \$92-96 per barrel range. The emerging dialogue between Iran, the U.S. and the E.U. may put downward pressure on crude oil prices over the next year. Other factors putting downward pressure on prices are forecasts of increased U.S. tight oil and Canadian oil sands production. Tight oil production from the North Dakota Bakken region is forecast to soon exceed 1 million barrels per day. This month Canadian National Energy Board forecast that oil sands production would more than double to 5 million barrels per day by 2035: see article on page 6.

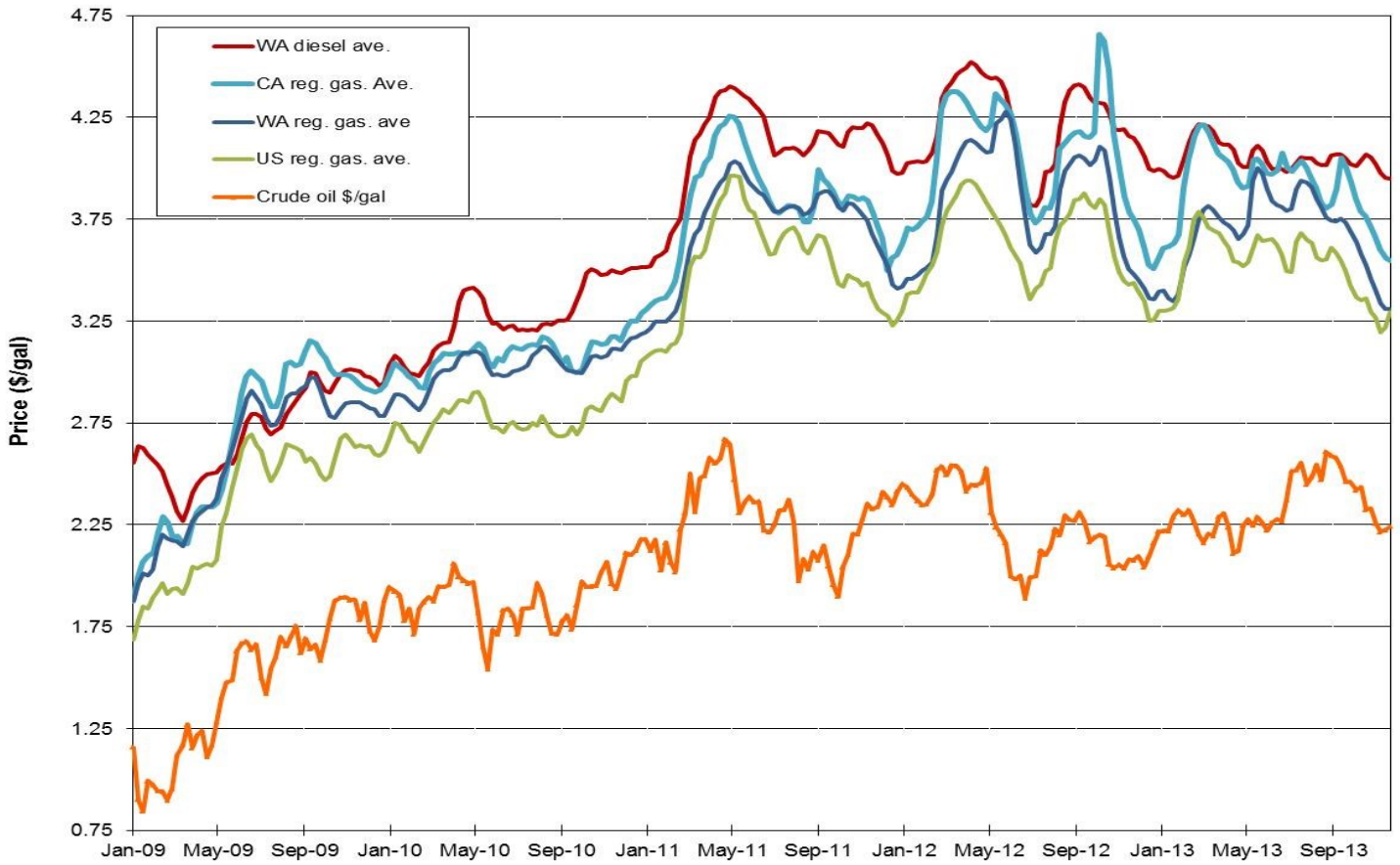
During the last week of November U.S. gasoline and diesel prices averaged \$3.29 and \$3.84 per gallon respectively: 15 and 19 cents per gallon lower than at this time last year. Washington state gasoline and diesel prices averaged \$3.31 and \$3.95 per gallon respectively: 17 and 20 cents per gallon lower than last year at this time. Gasoline and diesel prices usually reach their annual low points by the end of Nov. to end of Dec. The national per gallon price differential between gasoline and diesel (currently 55 cents/gallon) is larger than was seen in 2012 or 2011 (about 25 cents/gallon). This is likely the result of continuing declines in U.S. demand for gasoline, as more efficient light duty vehicles replace older units, and the increasing global demand for diesel fuel.

The price for front month (one month ahead) NYMEX natural gas was \$3.76 per MMBtu, 5 cents higher than reported last month. Locally natural gas spot price at Kingsgate was \$3.62 per MMBtu, down 13 cents from the price reported last month. Nationally there was natural gas storage draw of 45 Bcf. Gas storage levels are 3,789 Bcf about 0.4% above the 5-year average. Gas storage in the West is running 7.4% above the 5-year average.

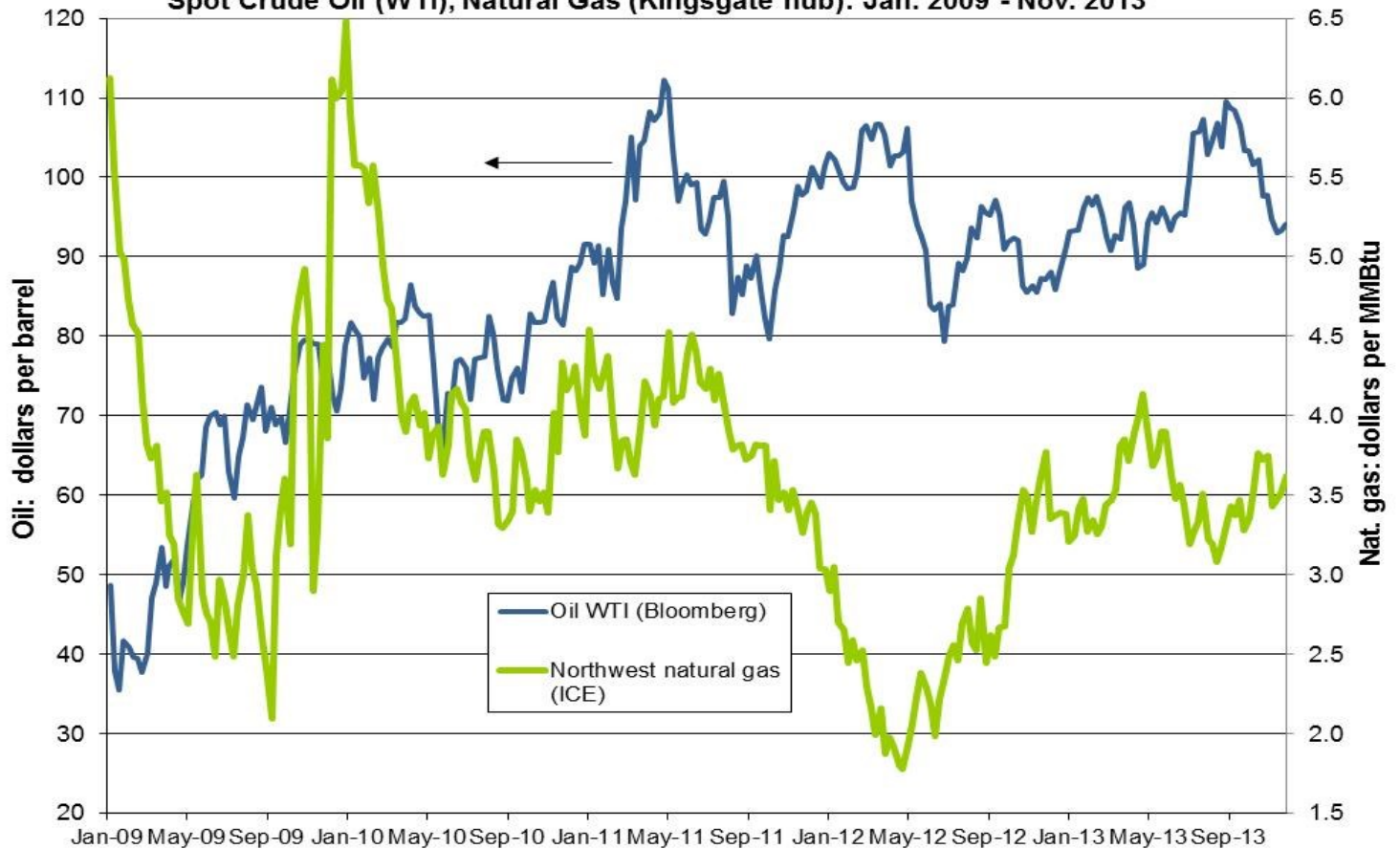
Regional electricity prices are largely unchanged since last month's report: Sept. monthly average \$37.2 per MWh versus \$37.8 for the previous month. This is \$8.3 per MWh higher than the Nov. 2012 average monthly spot price.

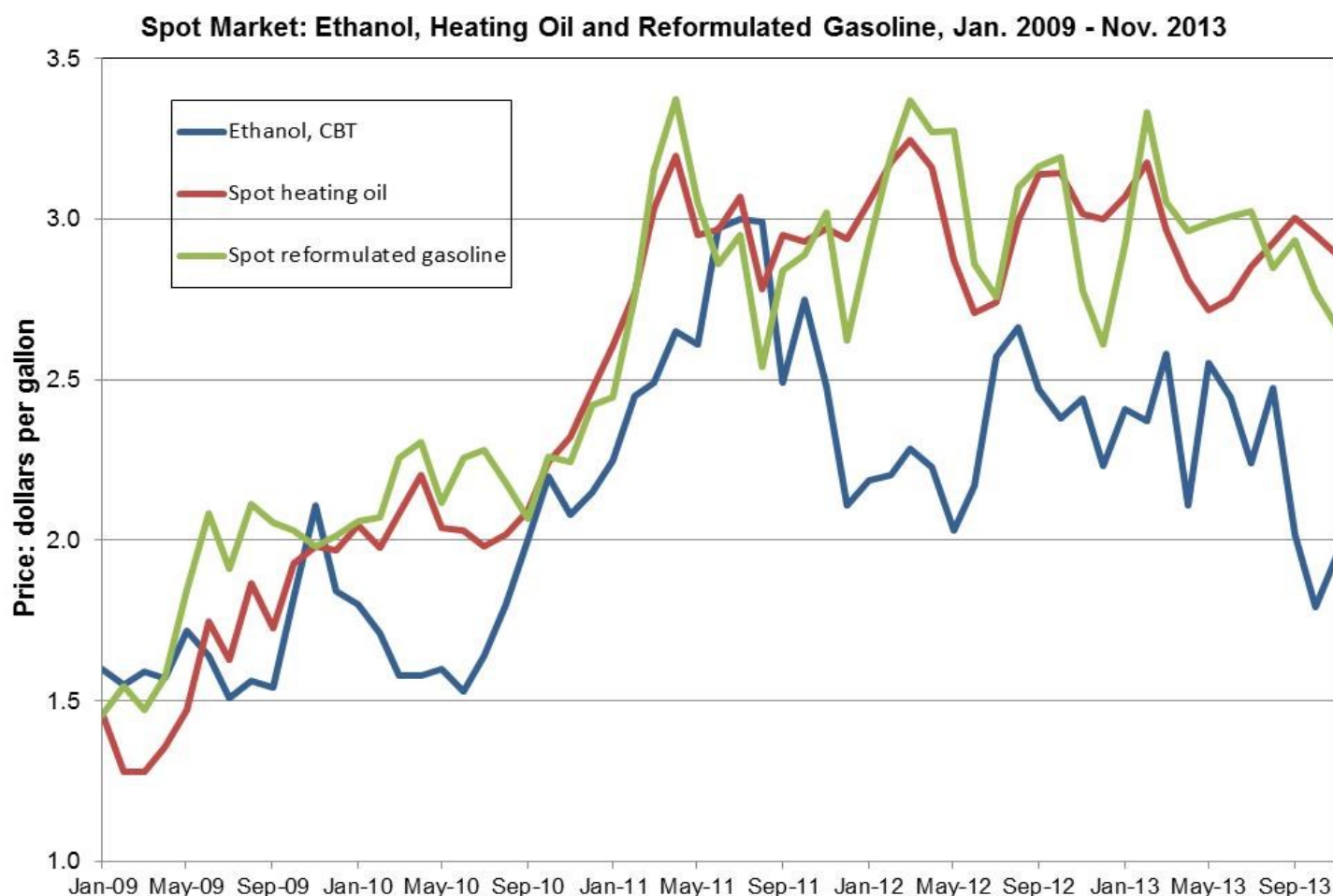
Energy Price Summary	Current	Month Ago	Year Ago
Monthly Range at Mid-C (Peak: \$ per MWh)	28-46.5	28-44	24-34
Average Mid C price (Peak hours \$ MWh)	37.2	37.8	28.9
Electricity WA Retail: <u>Sept.</u> (cents/kWh)	7.01	7.01	6.82
Natural gas Kingsgate spot price (next day: \$ per million BTU)	3.62	3.75	3.77
Natural gas Sumas ave. price: <u>Sept.</u> (\$ per million BTU)	NA	3.15	2.56
Natural gas futures (NYMEX next month: \$ per million BTU)	3.76	3.71	3.75
E85 (national average: \$ per gallon gasoline)	3.64	3.57	4.36
Ethanol (CBT next month contract: \$ per gallon)	1.96	1.79	2.44
Corn (\$ per bushel)	4.25	4.30	7.58
Petroleum, West Texas Intermediate: (\$ per barrel)	94.1	97.8	87.2
Seattle gasoline price (\$ per gallon)	3.34	3.48	3.49
Gasoline futures (NYMEX next month: \$ per gallon)	2.59	2.63	2.74
State diesel price (\$ per gallon)	3.95	4.05	4.15
Heating oil futures (NYMEX next month: \$ per gallon)	2.91	2.96	3.01
U.S. residential propane price report (reported Oct.-Mar.)	2.55	2.41	2.41
Clean Cities: Alternative Fuel Price Report, July 2012	US Avg current	West Coast current qtr	West Coast last qtr avg
Ethanol E85 (\$ per gas gallon equiv.)	4.55	4.79	4.98
Biodiesel B20 (\$ per diesel gallon equiv.)	3.97	4.21	4.44
Biodiesel B99-100 (\$ per diesel gallon equiv.)	4.61	4.81	4.86
Compressed Natural Gas (\$ per gas gallon equiv.)	2.14	2.43	2.46
Propane (\$ per gas gallon equiv.)	5.20	4.13	4.18

Retail Gasoline and Diesel Prices: Jan. 2009 - Nov. 2013



Spot Crude Oil (WTI), Natural Gas (Kingsgate hub): Jan. 2009 - Nov. 2013





Energy Headlines - If you only have time to read a few articles—read these.

BMW Rolls Out Battery-Powered i3, Made with Moses Lake-Produced Carbon Fibers. Spokesman Review.
<http://www.spokesman.com/stories/2013/nov/09/bmw-rolls-out-battery-powered-i3-made-with-moses/>

EPA Proposes Reduction of Ethanol in Gas. Associated Press, Nov. 16.
<http://www.heraldnet.com/article/20131116/BIZ/711169965>

World set to miss temperature target by a mile, IEA reports. Politico, Nov. 13.
<http://www.politico.com/story/2013/11/iea-temperature-target-99755.html>

Ozone-hole treaty slowed global warming. Nature, Nov. 10.
<http://www.nature.com/news/ozone-hole-treaty-slowed-global-warming-1.14134>

A recharging industry rises. New York Times, Nov. 12.
<http://www.nytimes.com/2013/11/13/business/energy-environment/electric-cars-give-rise-to-a-recharging-industry.html>

Shale's effect on oil supply is forecast to be brief. New York Times, Nov. 13.
<http://www.nytimes.com/2013/11/13/business/energy-environment/shales-effect-on-oil-supply-is-not-expected-to-last.html>

Developing Nations Stage Protest at Climate Talks. New York Times, Nov. 21.
<http://www.nytimes.com/2013/11/21/world/rich-and-poor-nations-spar-over-climate-damages.html?partner=rss&emc=rss&r=0>

Energy Headlines—continued

As Prices Come Down, LED Bulbs Are Catching On. Seattle Times.

http://seattletimes.com/html/business/technology/2022222666_ledbulbscatchonxml.html

DOE Does the Right Thing in Promising It Has No Plan to Run Bonneville Power Administration. Oregonian.

http://www.oregonlive.com/opinion/index.ssf/2013/11/doe_issues_promise_to_wyden_it.html

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<http://www.forbes.com/sites/michaelkrancer/2013/11/15/nuke-huggers-why-some-climate-scientists-are-warming-to-nuclear-power/>

67 Percent of Consumers Would Pay More for Clean Energy. The Energy Collective, Nov. 16.

<http://theenergycollective.com/stephenlacey/303081/67-consumers-would-pay-more-clean-energy>

Op/Ed: Megastorms Could Create Tipping Point for Climate Action. News Tribune, Nov. 17.

<http://www.thenewtribune.com/2013/11/17/2897080/megastorms-could-create-tipping.html>

Where Will Electric Vehicles Get Their Juice? Forbes Magazine, Nov. 18.

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Hyundai to Market Hydrogen Vehicle Next Year. Associated Press.

<http://www.seattlepi.com/business/energy/article/Hyundai-to-market-hydrogen-vehicle-next-year-4991667.php>

Coal Export Terminal Proposed for Longview Draws Unprecedented 163,000-Plus Public Comments. Associated Press.

http://www.oregonlive.com/pacific-northwest-news/index.ssf/2013/11/coal_export_terminal_in_longvi.html

Power Grid ‘Under Considerable Stress’ from New Carbon Rules, AEP Exec Says. Columbus Business First.

<http://www.bizjournals.com/columbus/blog/2013/11/power-grid-under-considerable-stress.html>

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http://www.nytimes.com/2013/11/19/world/asia/fuel-removal-starts-at-japans-crippled-nuclear-plant.html?partner=rss&emc=rss&_r=0

Cosmic rays again ruled out as cause of global warming. NBC News, Nov. 8.

<http://www.nbcnews.com/science/cosmic-rays-again-ruled-out-cause-global-warming-8C11565156>

Storms are becoming more intense, moving towards poles. Science News, Nov. 11.

<https://www.sciencenews.org/article/storms-are-becoming-more-intense-moving-toward-poles>

Solar power begins to shine as environmental benefits pay off. New York Times, Nov. 11.

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Energy Department Is Told to Stop Collecting Fee for Nuclear Waste Disposal. New York Times, Nov. 20.

http://www.nytimes.com/2013/11/20/us/energy-dept-is-told-to-stop-collecting-fee-for-nuclear-waste-disposal.html?partner=rss&emc=rss&_r=0

The High Stakes of Transporting Oil by Rail. The Vancouver Sun, Nov. 4.

<http://www.vancouversun.com/news/high-stakes+transporting+rail/9124923/story.html>

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http://www.nytimes.com/2013/11/19/world/top-un-official-warns-of-coal-risks.html?_r=0

Japan’s New CO2 goal Dismays U. N. Climate Conference. Reuters, Nov. 15.

<http://www.reuters.com/article/2013/11/15/us-climate-japan-idUSBRE9AE00P20131115>

Tesla mulls giga-factory for EV batteries. Autonews, Nov. 5.

<http://www.autonews.com/article/20131105/OEM05/131109887/tesla-mulls-giga-factory-for-ev-batteries-musk-says?ccid=email-autonews-daily&r=6334E3775912E4Z#axzz2li0wqfle>

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<http://www.nytimes.com/2013/11/20/business/economy/unavoidable-answer-to-problem-of-climate-change.html?src=un&feedurl=http%3A%2F%2Fjson8.nytimes.com%2Fpages%2Fbusiness%2Fenergy-environment%2Findex.jsonp>

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Wind Power Technology Roadmap 2013. International Energy Agency, October 2013.

<http://www.iea.org/publications/freepublications/publication/name,43771,en.html>

Fifth Assessment Report. Intergovernmental Panel on Climate Change (IPCC).

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First academic study released in EDF's groundbreaking methane emissions series. Environmental Defense Fund, Sept 2013.

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<http://energy.gov/downloads/report-first-quadrennial-technology-review>

Understanding Household Preferences for Alternative- Fuel Vehicle Technologies. Mineta Transportation Institute. <http://www.transweb.sjsu.edu/project/2809.html>

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Annual Energy Outlook 2013: <http://www.eia.gov/forecasts/aeo/>

River & Snow Pack Info

- Observed Oct. stream flow at The Dalles: 129% of average.
- Observed Sept. precipitation above The Dalles: 37% of average.
- Forecast runoff at The Dalles: 97 million acre-feet, 96% of 30-year average
- Estimate of 2012-13 snow pack: NA
- Federal hydropower generation in Sept.: 7,170 aMW, 2009-2013 average: 7,350 aMW.
- Reservoir content (Libby, Hungry Horse, Grand Coulee, Dworshak): Sept. 85%, 5-year average: 83%.

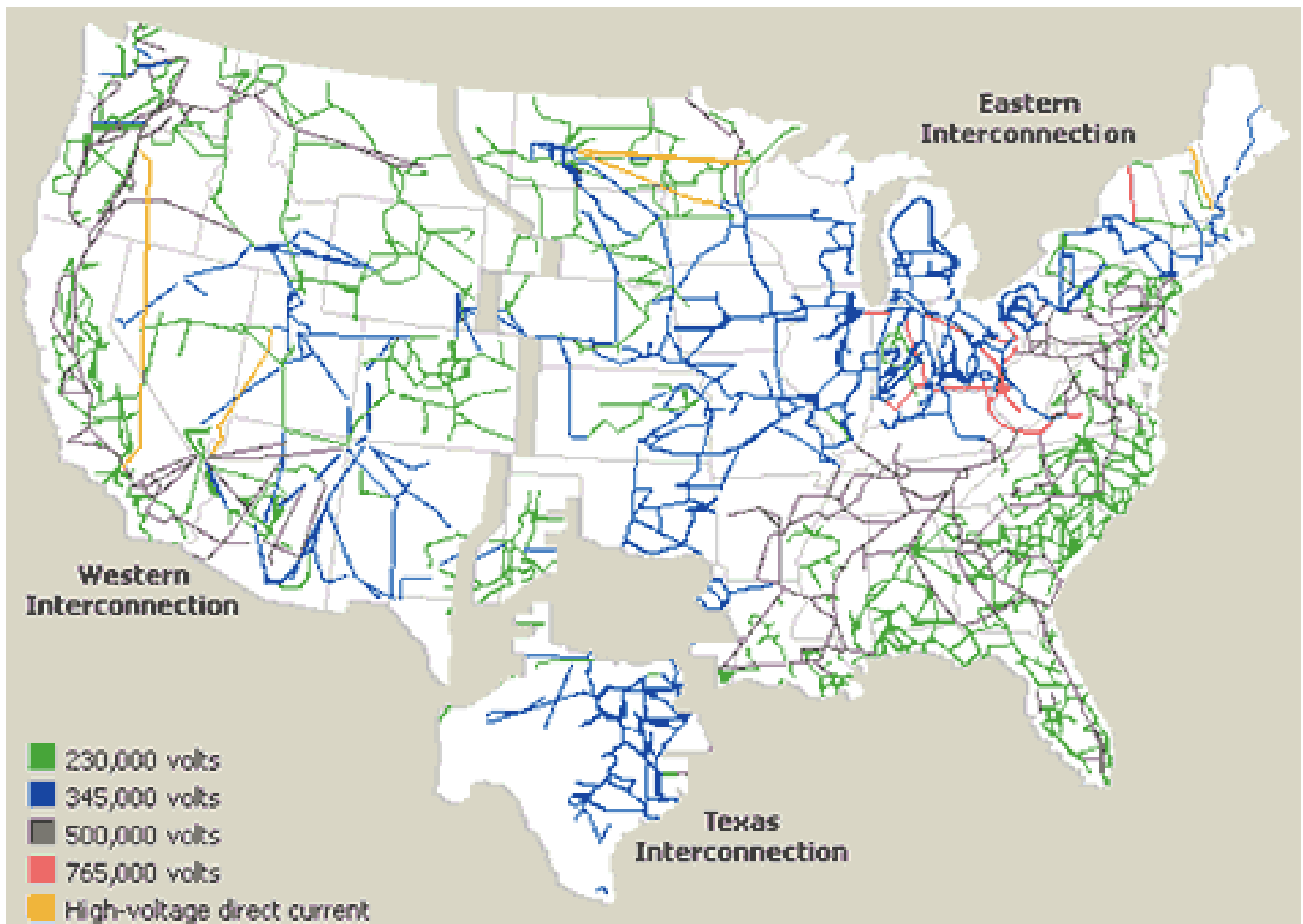
Power Exchanged

Average flow of power during the last 30 days

- | | |
|----------------------------|---------|
| • California (exported to) | 2440 MW |
| • Canada (export to) | 596 MW |
| • Net power exported: | 3036 MW |

America's Power Grid (from energy.gov)

America's electric grid is actually comprised of three smaller grids, called interconnections, that move electricity around the country. The Eastern Interconnection operates in states east of the Rocky Mountains, The Western Interconnection covers the Pacific Ocean to the Rocky Mountain states, and the smallest – the Texas Interconnected system – covers most of Texas, as displayed in the map below. The electric grid is an engineering marvel, but its aging infrastructure requires expensive upgrades to effectively meet the nation's energy demands.



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Innovation is in our nature.

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